Questions and Common Concerns

L'Anse Warden Electric Company (LWEC)
Proposed Permit to Install 53-17 and Renewable Operating Permit (ROP) Renewal

July 26, 2017

What are the engineered fuel pellets that LWEC is proposing to burn?
The engineered fuel pellets are produced by Convergen Energy, who now owns LWEC. The pellets are made from non-recyclable industrial label and packaging materials (mostly paper / cardboard and plastics). No post-consumer material is used to make the pellets. They are classified by the United States Environmental Protection Agency (USEPA) as a non-hazardous secondary material ("non-waste fuel") under the Alternative Fuels Program for purposes of the Resource Conservation and Recovery Act, which is documented in a letter from the USEPA. This letter, which is included in the proposed permit as Appendix A, spells out the criteria that the fuel must meet in order to continue to be classified as a non-waste fuel. The proposed permit requires a fuel analysis to be performed on a representative sample for every shipment of fuel pellets delivered to LWEC.

What kind of potential emissions are produced from burning the engineered fuel pellets?
The fuel pellets produced by Convergen have been burned in boilers at other facilities, where stack testing was performed to determine emission rates. This information, along with analytical data on the content of the fuel pellets, was used in the emission calculations that were reviewed by the Michigan Department of Environmental Quality (MDEQ).

The fuel pellets contain plastics including polyethylene, polypropylene, polyester, nylon, and trace amounts of other plastics. Plastics are composed of hydrocarbon chains, incorporating some nitrogen and oxygen. Large industrial boilers like the one at LWEC operate at very high temperatures and with a long fuel residence time, which results in a very high degree of combustion. Plastic may also contain plasticizer chemicals (phthalates), which are hydrocarbons. Phthalates would be combusted along with other hydrocarbons.

Polyvinyl chloride (PVC), which is present in trace amounts in the fuel pellets, contains chlorine. Chlorine cannot be destroyed by combustion, but rather is emitted as hydrogen chloride (HCl) when burned. Under the proposal, LWEC will install a sorbent injection system to control HCl emissions in order to meet the existing HCl permit limits. The sorbent injection system will reduce emissions of acid gases, including HCl, sulfur dioxide (SO_2), and hydrogen fluoride. The proposed permit requires LWEC to continue to meet the same emission limits as before; no emission limits have been increased. Some of the fuels that LWEC is already permitted to burn (like tire derived fuel) contain higher levels of sulfur and chlorine than the fuel pellets. Overall, a decrease in these acid-gas emissions is expected as a result of this project.

All fuels contain trace amounts of metals. Metals are another component that cannot be destroyed by combustion. However, metals can bind with particulate matter and be collected by the particulate control equipment. The fuel pellets contain lower amounts of trace metals than some other fuels LWEC is permitted to burn.

LWEC will be required to perform emissions testing while burning the fuel pellets, to verify that emissions continue to meet the permit limits. The proposed permit will require LWEC to test for particulate matter, SO_2, nitrogen oxides (NOx), HCl, arsenic, lead, manganese, and nickel.

Will tests be conducted to verify that the company is meeting the emission limits?
The proposed permit requires LWEC to perform stack testing to verify emission rates from the boiler while burning the engineered fuel pellets. The testing will be performed at various fuel mix ratios, including at least 3 different levels of engineered fuel pellets. The ROP will continue to require emissions testing once every five years. Testing for HCl, following the schedule established in the 2016 MDEQ enforcement action, will continue to be required. LWEC is required to submit a "Test Protocol" before any testing is performed. The MDEQ must approve the test protocol prior to the test. The facility also has continuous monitors for opacity and carbon monoxide.

How can nitrogen oxides (NOx) emission increase on an annual basis if the fuel pellets are expected to have lower emissions of NOx?
The Proposed Project Summary states that the fuel pellets are expected to have lower emissions of NOx, but the Fact Sheet shows that there is a projected emissions increase of 0.2 tons of NOx per year. The fuel pellets are expected to emit less NOx per unit of energy (lb/MMBtu) than the current fuel mix, however LWEC expects that the plant will need to produce slightly more energy to meet demand over the next year. Since the company expects to burn more fuel, the overall emissions are expected to increase slightly.

Will LWEC be allowed to continue to burn fuel pellets after the temporary permit expires?
The temporary permit will expire 180 days after LWEC first burns the fuel pellets in the boiler. LWEC will have to apply for another permit in order to continue burning the fuel pellets beyond 180 days. If LWEC submits a permit application to continue to burn fuel pellets, the Air Quality Division (AQD) will use the results from the emissions testing to establish the appropriate emission limits, fuel restrictions, operating requirements for the sorbent injection pollution control, and monitoring and recordkeeping requirements.

What is the status of the USEPA study of LWEC air emissions and topsoil sampling in L'Anse?
The USEPA has asked the federal Agency for Toxic Substances and Disease Registry (ATSDR) to evaluate the public health significance of a topsoil sampling study and a study of LWEC air emissions. The USEPA provided the ATSDR with an analysis of 16 L'Anse topsoil samples and modeled ambient air pollutant levels based on a July 2016 LWEC stack test. The MDEQ is anticipating the release of ATSDR's evaluation within the next couple of months.

Will LWEC conduct air monitoring in the community?
In early 2016, the USEPA notified LWEC that fence-line air monitoring of fugitive dust was required. However, the USEPA then determined that it was more important to first address the community complaints and facility violations. The MDEQ completed permitting and enforcement actions in 2016 aimed at addressing the facility's issues. LWEC has since discontinued the use of the pneumatic fuel conveyance system, and constructed enclosures around the fuel incline conveyors to control fugitive dust. The MDEQ has not received any dust complaints since August 2016, prior to the beginning of these control measures. Based on these positive outcomes, the USEPA has rescinded their request for LWEC to install fence-line air monitoring.

Who should citizens contact with questions and/or complaints about LWEC?
Citizen complaints should be directed to Mr. Ed Lancaster of the MDEQ, AQD, Upper Peninsula District Office. Ed can be reached at 906-250-5124 or via e-mail at lancastere1@michigan.gov.

It is recommended that you contact the AQD as soon as you observe a problem, to allow available staff to investigate the complaint while it is still on-going.